

MR853-738

Serial Number: 10/802,105

Reply to Office Action dated 19 September 2006

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**REMARKS/ARGUMENTS**

At the outset, the courtesies extended by the Examiner and his Primary Examiner in granting the 7 December 2006 interview are appreciatively noted. At the interview, the references cited by the Examiner in the 19 September 2006 Office Action were discussed in light of the clarifying amendments proposed to the Claims by the undersigned Attorney, as set forth herein.

Agreement as to the Claims having been reached at the interview, Claims 1-5 and 11-13 are amended responsive to the 19 September 2006 Office Action for further prosecution with the other pending Claim. It is believed that with such amendment of Claims, there is a further clarification of their recitations.

In the Office Action, the Examiner rejected Claims 1, 4, 6, and 13 under 35 U.S.C. § 102(b) as being anticipated by the Trevizo reference. The Examiner also rejected under 35 U.S.C. § 102(b) Claims 1-3 and 6 as being anticipated by the Fan reference, and Claims 11 and 12 as being anticipated by the Tranvoiz reference.

The Examiner further rejected Claims 2-3 and 5 under 35 U.S.C. § 103(a) as being unpatentable over Tranvoiz in view of the Trevizo reference. In setting forth this rejection, the Examiner acknowledged that Tranvoiz fails to disclose a bicycle pedal having a fixed shaft, but cited Trevizo for disclosing the feature, and concluded that it would have been obvious to a person having ordinary skill in the art to have incorporated as much into the Tranvoiz device.

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As each of the newly-amended independent Claims 1-5 and 11-13 now more clearly recites, Applicants' claimed apparatus includes among its combinations of features a "unitary" crank arm having "a fixed length" and a "bearing" disposed "directly therein." This bearing in the crank arm then serves to "receiv[e] an end" of a pedal's shaft "in substantially unrestricted rotatable manner independent of crank shaft configuration," such that this shaft and its pedal may freely rotate relative to the crank arm.

The full combination of these and other features now more clearly recited by Applicants' pending Claims is nowhere disclosed by the cited references. Note, for instance, that Trevizo's device employs a multi-piece crank assembly of re-configurable length, wherein a hub 23 is displaceably coupled to a pedal arm 10 by telescoping rods 22. The device is one which links the rotation of a pedal's "axel shaft 26" with a linear extension of this crank assembly, so that it may be extended in effective length (to thereby improve pedaling leverage) during downward swings of a pedal cranking revolution. This plainly forecloses any crank arm of "unitary," "fixed length" configuration recited in each of the newly-amended independent Claims 1-5 and 11-13.

What is more, the axel shaft 26 of a pedal 16 is affixed to a crank disc 14 which may be rotatable within the hub 23, but is necessarily connected to the pedal arm 10 by a connecting rod 12 serving much as a camshaft. Whenever the crank disc 14 turns with the pedal axel 26 relative to the hub 23, that hub 23 is

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telescopically extended/retracted relative to the pedal arm 10 by the connecting rod's camming operation. Hence, the pedal axle 26 is hardly received "in substantially unrestricted rotatable manner independent of crank arm configuration," as each of the newly-amended Claims now more clearly recites for Applicants' pedal shaft.

Turning to Tranvoiz, that reference does disclose a shaft 1 coupled at a terminal end to a crank arm 4 by what it terms a "bearing (5)." Tranvoiz nevertheless teaches specifically against receiving such bearing 5 in any rotatable manner. The bearing 5 is coaxially received within a ring 2 threadedly secured within the crank arm 4, the smooth surface coupling therebetween permitting the bearing's quick and easy disassembly (with the shaft 1) from the crank arm 4 – simply by unlocking then sliding the bearing 5 out from the ring 2. So long as it is assembled to the ring 2, however, the bearing 5 (and therefore its shaft 1) remains locked against any relative movement.

In each of the numerous embodiments disclosed, locking means such as a "stop (14)" are provided as shown "so as to avoid all relative movement," (column 4; lines 28-29). For example, in the primary embodiment of Figs. 1 and 2, the stop 14 is provided in the form of a retaining ball engaging a terminal end of the bearing 5 so as to bear against a rear of the crank arm 4 (as shown in Fig. 1), thereby guarding against the bearing's axial (longitudinal) escape from the ring 2. As shown in Fig. 2, this retaining ball 14 is (along with the blind hole 13 and

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spring 12) "positioned in line in a slot (7) for retaining them in rotation," (column 3; lines 39-40). That is, the "retaining ball (14) [is] mounted" to be "fitting in a cut-out (7) in an edge of the ring (2); so that in order to release the shaft (1), it is sufficient to push away the ball (14) so that the shaft (1) may be released" for either axial or rotational displacement (column 6; lines 7-12). Clearly, Tranvoiz prescribes the shaft 1 to be thereby locked to the crank arm 4 against any relative movement, rather than being received "in substantially unrestricted rotatable manner," as each of the newly-amended independent Claims now more clearly recites.

Lest there remain any doubt in this regard, Tranvoiz specifically points out that "variants on the basic shape" of the bearing may be other than the cylindrical shape shown. The reference notes that "the shaft and the corresponding bearing are [in such variants] polygonal in section, for example, or square or oval in section, where the major axis is preferably arranged perpendicular to the pedal shafts," (column 2; lines 63-66). Such ready substitutes in sectional contour flatly foreclose any notion of Tranvoiz's shaft 1 and its bearing 5 being at all rotatable when assembled to the crank arm 4 and its ring 2.

Turning next to the Fan reference, that reference discloses an ergonomic device which replaces a regular pedal otherwise be secured to a pedal crank 2 with an auxiliary crank 3 which offsets and angularly orients the pedal 1 relative to the axis of rotation defined by the assembly (formed by extension sleeve 33, ball

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bearings 32, and shaft 34). The assembly is disposed outside the pedal crank 2 itself, and is fixedly secured thereto by the threaded end of the shaft 34. This departs from a crank arm having a "bearing" disposed "directly therein," which in turn "receiv[es] an end" of the given pedal "shaft," as each of the newly-amended independent Claims now more clearly recites.

It is respectfully submitted, therefore, that the cited Trevizo, Tranvoiz, and Fan references, even when considered together, fail to disclose the unique combination of elements now more clearly recited by Applicants' Claims for the purposes and objectives disclosed in the subject Patent Application.

It is now believed that the subject Patent Application has been placed fully in condition for allowance, and such action is respectfully requested.

No fees are believed to be due with this Amendment. If there are any charges associated with this filing, the Honorable Commissioner for Patents is hereby authorized to charge Deposit Account #18-2011 for such charges.

Respectfully submitted,

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